Larry Shapiro and Elliott Sober argue that Jaegwon Kim's Problem of Causal Exclusion rests on imagining an impossibility. Kim invites one to consider a physical supervenience base P that has a supervening mental property M and a physical causal effect P*. Kim claims that "P alone," without M, is causally sufficient for P* and that to deny this claim would be to violate the assumption of physical causal closure.

Because the mental property M supervenes on the physical supervenience base P, it is impossible, in some modal sense, for P to occur without M. So there is an apparent contradiction, or at least a tension, between Kim's assumption of a supervenience relation between M and P and his claim that P alone is sufficient for P*. Since the supervenience relation (i.e. Strong Supervenience) is a relationship of necessity, P necessarily entails M if M supervenes on P. Shapiro and Sober's claim that Kim's Problem of Causal Exclusion rests on imagining an impossibility may plausibly be spelled out in terms of this contradiction between strong supervenience and the claim that P is sufficient for P*.

A number of conceptual issues are relevant to the evaluation of Shapiro and Sober's argument against Kim. One issue is the nature of the necessity relation from P to M, since there are differing types of necessity including logical necessity and nomological necessity. I will argue that Shapiro and Sober's argument against Kim is only successful if one posits a relation of logical necessity between M and P but that the argument fails if the relation between M and P is of a weaker nomological sort.

A second issue that is relevant to the evaluation of Shapiro and Sober's argument against Kim is a consideration of what Kim's argument minimally requires. Kim invites his reader to imagine a case of P alone, without M, as a cause of P*. Shapiro and Sober hold that this is an impossible situation, but what does Kim's argument minimally require to be successful? Does Kim's argument require that "P sans M" is logically possible, physically possible, or merely conceptually possible? I argue that the answer to this question will have an impact on the success or failure of Shapiro and Sober's argument.

I shall begin with the consideration of the sort of necessity relation there is between M and P. There seem to be two relevant senses of necessity. P could necessitate M by means of logical necessity, or P could necessitate M by means of nomological necessity. Since laws of nature are widely held to be contingent, if P nomologically necessitates M then P could (physically) necessitate M without logically entailing M. If this is a plausible account of the relation between mental properties and physical properties, then Shapiro and Sober would be incorrect in their claim that P without M is a conceptual impossibility. "P without M" might be physically impossible, but it would not be logically impossible or conceptually impossible on this account due to the contingency of physical laws.

If, on the other hand, the supervenience relation between M and P is a relation of a stronger logical necessity, then Kim's invitation to imagine P without M would seem to be problematic since M would be a necessary condition for P. It is clear that this discussion will hinge on the precise nature of the supervenience relation between M and P.

Jaegwon Kim himself has reflected on the nature of the supervenience relation, and its implications for the type of determination from P to M, in his "Postscripts on Supervenience."[1] Kim first distinguishes between weak supervenience and strong supervenience. Weak supervenience is the claim that if property A supervenes on property B, then any two beings that are alike in having property B will also be alike in having property A. Weak supervenience makes no claim that the base property actually determines the supervening property; only that there is a correlation between the possession of the two properties in question. By contrast, Strong supervenience adds the claim that the base property actually determines the supervening property, such that an entity's having the base property determines that the entity will also have the supervening property.

[1] Kim, Jaegwon. "Postscripts on Supervenience " in *Supervenience and Mind*, Cambridge University Press, 1993.

In “Postscripts on Supervenience” Kim observes that the presence of a Strong Supervenience relation between two properties does not itself determine what type of dependence relation exists between the properties:

“There is no harm in using the term ‘supervenient dependence’ to refer, indifferently or disjunctively, to one or another of the many dependence relationships that can underlie the property covariance involved in instances of supervenience. But it now seems to me a mistake, or at least misleading, to think of supervenience itself as a special and distinctive type of dependence relation, alongside causal dependence, mereological dependence, dependence grounded in semantic connections and others.”[2]

Kim’s point here is that the claim that there is a supervenience relation between two properties does not settle the matter of what sort of dependence relationship provides the basis for the nature of mental properties and their relation to their physical supervenience bases. As Kim says, “Mind-body supervenience, therefore, does not state a solution to the mind-body problem; rather it states the problem itself.”[3]

If Kim is correct here that the Strong Supervenience relation itself is neutral as to the exact type of necessity that provides the basis for the supervenience relation, then Shapiro and Sober are incorrect that there is a logical contradiction between the claim that M supervenes on P and the claim that P alone is sufficient for P*. And if Strong Supervenience is compatible with modally weaker notions of necessity such as causation via contingent natural laws, then the conceptual impossibility that Shapiro and Sober find in Kim’s reasoning seems to be abated. Kim is quite clear on this point: “[Mind-body] supervenience merely affirms a dependence relation of an unspecified sort and does nothing more to explain the nature of psychophysical covariance. But supervenience itself is not an explanatory relation. It is not a ‘deep’ metaphysical relation; rather, it is a ‘surface’ relation that reports a pattern of property covariation, suggesting the

[2] Ibid. pp. 167.
[3] Ibid. pp. 168.

presence of an interesting dependency relation that might explain it."[4]

Kim himself is optimistic that the mind-body supervenience relation might ultimately be grounded in a mereological (part/whole) dependence relation. But even mereological dependence seems to me to be determined by contingent natural laws, such that different physical laws may result in a complex structure having different macro-properties. The contingency of nomological necessity diffuses the conceptual tension that Shapiro and Sober see in Kim's Problem of Causal Exclusion. Again, Shapiro and Sober's argument requires that the supervenience relation be spelled out in terms of a stronger logical necessity, but the concept of supervenience is not properly invoked in such a metaphysically weighty manner without further justification.

As for the question of what Jaegwon Kim's Supervenience Argument minimally requires when considering the possibility of "P alone without M," three possibilities come to mind. Does Kim's argument require that "P alone" is logically possible, nomologically possible, or conceptually possible?

The second option, nomological possibility, can be discounted immediately. Even if Strong Supervenience is grounded in a modally weaker sense of necessity, such as causation or mereological dependence, then it would be physically impossible for there to be P without M given those causal or mereological laws. So it seems implausible to say that Kim's argument requires one to hold that it is physically or nomologically possible for there to be P without M given whatever physical laws already underlie the generation of the mental properties from physical properties in actuality.

The first option, logical possibility, is more plausible. However, should Strong Mind-Body Supervenience be determined to be grounded in a modally stronger type of necessity, then the nature of the dependence relationship that underlies Mind-Body supervenience would make it logically impossible to have P without M. This is the point that Shapiro and Sober are making

[4] Ibid. pp. 167.

use of in their argument against Kim. However, as stated above, Strong Supervenience itself is insufficient to guarantee that such a modally strong dependence relation is what is underlying the supervenience relation. And should it turn out that the Mind-Body Supervenience relation is grounded in a modally weaker (i.e. contingent) dependence relation, then this would serve to show that "P alone without M" is in fact logically possible.

And finally, the third possibility for what Kim's argument minimally requires, conceptual possibility, is the best candidate for how to read Kim's argument. For the moment, assume that Shapiro and Sober are correct in their claim that "P alone without M" presents a genuine logical impossibility, due to a modally strong dependence relation underlying the supervenience relation present between P and M. This would be granting Shapiro and Sober what they take themselves to need to make their case against Kim's argument.

However, even in the case of a genuine logical impossibility, this does not mean that the situation under consideration is a conceptual impossibility. Consider Frege's example of Hesperus and Phosphorus. Although it is logically impossible that the referents of the two terms "Hesperus" and "Phosphorus" are distinct (being numerically identical), nonetheless it was conceptually possible that Hesperus and Phosphorus could have been separate objects despite the presence of a logical impossibility of this being the case. This is Frege's famous distinction between sense and reference.

Now, of course, it is problematic to base an argument against Shapiro and Sober on a point as controversial as Frege's distinction between sense and reference. But regardless of how this debate turns out, the intelligibility of statements such as "Hesperus is not phosphorus" serves to show that such statements can express genuine conceptual possibilities despite whatever logical contradictions there may be when considering the referents of the terms within the statements.

"P alone without Q" is analogous to the Hesperus and Phosphorus example from Frege. Even if one assumes that the relationship between P and M is one of logical necessity, the

term “P alone without M” is conceptually possible and makes perfect sense. The fact that P and M are not numerically identical, unlike the case of Hesperus and Phosphorus, adds further credence to the claim that “P alone without M” is conceptually possible. In the case of Hesperus and Phosphorus, one might have the worry that because the two referents are numerically identical, as soon as one learns this fact (even if that process is not a priori, such as Kripke claimed), then the conceptual possibility is eliminated because of this new knowledge. In other words, one might have the worry that the conceptual possibility of “Hesperus is not Phosphorus” or “P alone without M” is due to a state of ignorance about the strength of the relationship between the two terms.

This may be plausibly true in the case of Hesperus and Phosphorus, a case of numerical identity. But in the case of “P alone without M” the fact that P and M are not numerically identical alleviates this worry. It must be remembered that Kim is considering a case of nonreductive physicalism, in which M and P are not numerically identical. And I believe that one can appeal to this fact, despite the presence of a modally strong necessity relation between P and M (which itself is not determined by the presence of a Strong Supervenience relation between P and M), to establish the conceptual possibility of “P alone without M” and hence show that this expression is conceptually coherent.

It may be true that P logically necessitates M, although this is not a consequence of Supervenience as such since there are other types of necessity that may ground the covariance between P and M. But even if this is the case, P and M are still distinct entities and different properties, and I argue that it makes perfect sense to consider them separately despite whatever logical connection there may be between them.

In a way, Kim’s view that Strong Supervenience is compatible with various sorts of necessity/dependence relations would itself satisfy Shapiro and Sober’s search for an empirical method for examining the possibility for mental causation. Suppose that one observes a covariance between a mental property and a physical property. This gives one reason to think that

there is a deeper and more profound relation between M and P than mere covariance.

One may very well need to use empirical or scientific methodology to establish what sort of relationship is grounding the covariance. But whatever type of dependence relation is underlying the supervenience relation, Shapiro and Sober are mistaken that Kim's argument rests on imagining a conceptual impossibility. His argument may rest on a logical or physical impossibility (especially on modally strong readings of Supervenience), but Kim's argument is neutral on this point and the conceptual possibility of his use of "P alone without M" is not threatened by such cases.